

Title (en)

Process for producing silicon carbide single crystal

Title (de)

Verfahren zur Herstellung von Siliziumkarbideinkristall

Title (fr)

Procédé de fabrication de carbure de silicium monocristallin

Publication

EP 1439246 B1 20080625 (EN)

Application

EP 04007217 A 20010406

Priority

- EP 01108736 A 20010406
- JP 2000106292 A 20000407
- JP 2000365443 A 20001130

Abstract (en)

[origin: EP1143033A2] A process for preparation of silicon carbide by depositing silicon carbide on at least a part of a surface of a substrate having on its surface undulations extending approximately in parallel with each other, wherein a center line average of said undulations is in a range of from 3 to 1,000 nm, gradients of inclined planes of said undulations are in a range of from 1 DEG to 54.7 DEG , and, in a cross section orthogonal to a direction along which the undulations are extended, portions at which neighboring inclined planes are brought in contact with each other are in a curve shape. The substrate is silicon or silicon carbide having a surface with a plane normal in a crystallographic <001> orientation, having $\bar{a}001\bar{u}$ planes accounting for 10 % or less of the entire area of the surface, etc. Also claimed is a single crystal silicon carbide having a planar defect density of 1,000 /cm² or lower, or having an internal stress of 10 MPa or lower. <IMAGE>

IPC 8 full level

C23C 16/32 (2006.01); **C30B 19/00** (2006.01); **C30B 25/02** (2006.01); **C30B 25/18** (2006.01); **C23C 16/44** (2006.01)

CPC (source: EP US)

C23C 16/325 (2013.01 - EP US); **C30B 19/00** (2013.01 - EP US); **C30B 25/02** (2013.01 - EP US); **C30B 25/18** (2013.01 - EP US); **C30B 29/36** (2013.01 - EP US)

Designated contracting state (EPC)

DE FR GB NL SE

DOCDB simple family (publication)

EP 1143033 A2 20011010; **EP 1143033 A3 20021023**; **EP 1143033 B1 20040901**; DE 60105218 D1 20041007; DE 60105218 T2 20050804; DE 60134581 D1 20080807; EP 1439246 A1 20040721; EP 1439246 B1 20080625; US 2002014198 A1 20020207; US 6596080 B2 20030722

DOCDB simple family (application)

EP 01108736 A 20010406; DE 60105218 T 20010406; DE 60134581 T 20010406; EP 04007217 A 20010406; US 82717801 A 20010406